ATTACHMENT G

DEQ APPROVALS AND NOTIFICATIONS

From:	Linda Baker
To:	Jane Sund; Mike Byers; Craig Heimbucher; Jamie Stevens
Subject:	Fwd: Evraz Riverbank Import Criteria and Results - per our discussion
Date:	Thursday, July 16, 2015 9:05:41 AM

Sent from my iPhone

Begin forwarded message:

> **From:** SUTTER Jennifer <SUTTER.Jennifer@deq.state.or.us>
> **Date:** July 15, 2015 at 8:52:05 PM PDT
> **To:** Linda Baker <lbaker@integral-corp.com>
> **Subject: RE: Evraz Riverbank Import Criteria and Results - per our discussion**
>
> Linda
> Beach backfill and 1.5" minus material look good with the assumptions presented in your email.
> Jennifer
>
> _____
> From: Linda Baker [lbaker@integral-corp.com]
> Sent: Wednesday, July 15, 2015 5:46 PM
> To: SUTTER Jennifer
> Cc: Poulson.mike@deq.state.or.us
> Subject: RE: Evraz Riverbank Import Criteria and Results - per our discussion
>
> Jennifer -
>
> Verbal results for the three additional 5-point composite samples of the beach backfill for arsenic are in and the results are 4.29, 4.43 and 4.46 mg/kg - we should get laboratory reports tomorrow.
>
> The attached table shows the results for three of the potential import material. Copper, manganese or zinc are not included on the table as the supplier missed those on the first sampling go-around (but did them on the second sampling). They are reportedly below criteria and we should get laboratory reports tomorrow to confirm.
>
> As we discussed yesterday, these were not composite samples but the product itself is managed and mixed to get the proper rock size gradation. The arsenic results support the homogeneity of the material. Future samples of import material will be composited.
>
> Given these results (to be confirmed by review of laboratory reports), on Thursday, the contractor would like to schedule the import of Beach Backfill (DAYBREAK G-109 BEACH BACK) and the 1.5" minus rock

(LIVINGSTON G-121 ODOT 1½'), with the material starting to arrive at EVRAZ as early as next Monday. They will be working on the berm early in the week and hope to get to the bank and beach later in the week. We will provide DEQ and EPA with formal documentation of the results next week.

We would like to discuss the berm backfill result (LIVINGSTON G-121 BERM BAC) on Friday (see D/F results on attached table). The likely source of this D/F is dredge sand from the Columbia River.....We also would like to discuss the need for an additional sample of the beach backfill if we slightly exceed the 5,000 cy criteria for a second sample (e.g., 5,300 cy up to 6,000 cy) provided we can demonstrate that the Beach backfill and 1.5 inch minus are from the same source.

Please confirm that you concur the beach backfill and 1.5" minus rock are acceptable for use (provided the laboratory reports support the data in the attached table - as we expect them to, and the copper, manganese and zinc are below criteria - as we also expect).

Thanks for taking time to look at this.

Linda Baker
Integral Consulting Inc.
Direct: 206.957.0314 | Cell: 206.719.3421

-----Original Message-----
From: SUTTER Jennifer [mailto:SUTTER.Jennifer@deq.state.or.us]
Sent: Wednesday, July 15, 2015 2:49 PM
To: Linda Baker
Cc: Poulson.mike@deq.state.or.us
Subject: RE: Evraz Riverbank Import Criteria and Results - per our discussion

Linda
You can send the results to me. I'll try to check email periodically. You could also check with mike poulson.
Jennifer

From: Linda Baker [lbaker@integral-corp.com]
Sent: Tuesday, July 14, 2015 4:42 PM
To: SUTTER Jennifer
Subject: Evraz Riverbank Import Criteria and Results - per our discussion

Jennifer -

Per our discussion today on import criteria and import results:

1. You are OK with import meeting the 8270 reporting limits specified on Table 1 in mg/kg (not ug/kg as the table incorrectly indicates). For

most chemicals including PAH, this is a reporting limit of 0.33 mg/kg (or lower) and with a few exceptions, this limit is below the JSCS SLV identified in Table 3-1 of the JSCS document.

2. The beach backfill import material met criteria with the exception of arsenic (results to be provided soon). The arsenic concentration was reported by the laboratory to be 59 mg/kg. The result was considered anomalous and the laboratory was asked to run an additional aliquot from the same sample. The second aliquot result was 4.45 mg/kg. Based on this result we requested that the supplier collect three 5-point composites to get a better handle on the arsenic concentrations. We should hear the results Wednesday. You indicated that, provided the arsenic concentrations meet the import criteria 8.8 mg/kg, we would be OK to use the import material.

3. We discussed the sampling frequency and approach and that DEQ's expectation was that the import data, if provided by the supplier, would be consistent with the approach outlined in the design report and be a composite, preferably a 5-point composite, and one per 5,000 cubic yards of material. I indicated that the beach import material is a mixed material that has been moved and stacked, essentially having been through a large-scale mixing process. For this beach import material, you indicated that the existing sample would be OK for decision-making (plus the 5-point composites for arsenic), but for any future sampling, the supplier should at a minimum, meet the procedures identified in Section 5.1 of the design report. And that the supplier will have to show a sufficient number of results to meet the one sample per 5,000 cubic yards frequency.

4. We discussed the berm backfill has two dioxin/furan above the reporting limits (import criteria). I mistakenly responded that this was the topsoil when in fact it is actually the berm construction/fill soil. We will be getting back with you shortly on these results and next steps.

You also indicated that you were out Wednesday and Thursday. In your absence, there anyone we could discuss the arsenic results with if we get a marginal result (e.g., two results well below 8.8 mg/kg and one result at 8.9 or 9 mg/kg?). The contractors would like to start bringing some of this material onsite Friday or Monday.

Thanks for your help.

Linda Baker | Principal Hydrogeologist
Integral Consulting Inc. | www.integral-corp.com<http://www.integral-corp.com/>
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HEALTH ENVIRONMENT TECHNOLOGY SUSTAINABILITY

-----Original Message-----
From: SUTTER Jennifer [mailto:SUTTER.Jennifer@deq.state.or.us]
Sent: Friday, July 31, 2015 9:08 AM
To: Linda Baker <lbaker@integral-corp.com>
Cc: Mike Byers (mike.byers@creteconsulting.com) <mike.byers@creteconsulting.com>; MCDONNELL Erin <MCDONNELL.Erin@deq.state.or.us>; Drew Gilpin (Drew.Gilpin@evrazna.com) <Drew.Gilpin@evrazna.com>; SUTTER Jennifer <SUTTER.Jennifer@deq.state.or.us>; MCCLINCY Matt <MCCLINCY.Matt@deq.state.or.us>
Subject: RE: Evraz Riverbank Import - Chemical testing results

Linda
DEQ has the lead on source control so I would recommend moving forward. I can't speak for EPA so I can't guarantee that they won't appeal our decision or whatever their process would be. However, I think that is very unlikely considering they were aware of the questions, DEQ's response, and the need for moving forward, and they did not express any concerns.
Jennifer

_____

From: Linda Baker [lbaker@integral-corp.com]
Sent: Thursday, July 30, 2015 10:41 AM
To: SUTTER Jennifer
Cc: Mike Byers (mike.byers@creteconsulting.com); MCDONNELL Erin; Drew Gilpin (Drew.Gilpin@evrazna.com)
Subject: RE: Evraz Riverbank Import - Chemical testing results

Jennifer -

Thanks for checking-in and responding.

I take this to mean that we do not need a separate approval from EPA - that we are good to start importing without risk. Can you confirm?

Linda Baker
Integral Consulting Inc.
Direct: 206.957.0314 | Cell: 206.719.3421

-----Original Message-----
From: SUTTER Jennifer [mailto:SUTTER.Jennifer@deq.state.or.us]
Sent: Wednesday, July 29, 2015 12:04 PM
To: Linda Baker
Cc: Mike Byers (mike.byers@creteconsulting.com); MCDONNELL Erin
Subject: RE: Evraz Riverbank Import - Chemical testing results

Hi Linda
Bandon is beautiful today!
I have not received any response from EPA on my email. Too bad they won't make it out today. DEQ approves of using the identified source for bank backfill.
Jennifer

_____
From: Linda Baker [lbaker@integral-corp.com]
Sent: Wednesday, July 29, 2015 11:57 AM
To: SUTTER Jennifer
Cc: Mike Byers (mike.byers@creteconsulting.com)
Subject: FW: Evraz Riverbank Import - Chemical testing results

If you are really checking email, I wanted to check-in and see if you had any feedback from EPA on the email below.

They contractor would like to start bringing in the 1.5 inch minus Bank Backfill on Friday and I read your email to indicate that we have DEQ approval of the material - but was holding off a bit prior to bringing it onsite to make sure EPA didn't have any issues. Since you are on vacation, we might not hear if they do...so wanted to check in and see if you had any feedback from EPA.

Also, EPA and Eric B. aren't going to make it to EVRAZ today on their source control tour (which was when I thought we would get to check-in on their thoughts on the import..)

Thanks and hope you are having sunny and nice weather!

Linda Baker
Integral Consulting Inc.
Direct: 206.957.0314 | Cell: 206.719.3421

From: SUTTER Jennifer [mailto:SUTTER.Jennifer@deq.state.or.us]
Sent: Thursday, July 23, 2015 3:34 PM
To: Linda Baker; Drew Gilpin (Drew.Gilpin@evrazna.com)
Cc: Craig Heimbucher
Subject: FW: Evraz Riverbank Import - Chemical testing results

Just sent this.
Jennifer

From: SUTTER Jennifer
Sent: Thursday, July 23, 2015 3:34 PM
To: 'DeMaria, Eva'
Cc: MCCLINCY Matt; Sheldrake, Sean; Michael Allen (allenmc@cdmsmith.com<mailto:allenmc@cdmsmith.com>); SUTTER Jennifer
Subject: RE: Evraz Riverbank Import - Chemical testing results

Eva
Thanks for your quick review of the Evraz import material evaluation. As we discussed in our phone conversation yesterday, I have provided responses to the concerns you raised below. We discussed most of these but there have been some new developments. Please let me know if you have any questions or continue to have concerns with this approach.

1. EPA had several comments related to the representativeness of the analytical results provided and consistency with the import fill protocols approved in the Remedial Design. DEQ had similar concerns and discussed the following approach with Evraz to address these issues:

a) Beach backfill - approximately 5,700 cubic yards of material will be required. The import fill sampling protocol specifies one composite sample per 5,000 cubic yards. Evraz is planning to complete analysis of the composite sample currently archived in the lab (collected for the As analysis) for all of the other required constituents (other metals, SVOCs/PAHs, PCBs, pesticides and dioxins/furans). The sample in the lab is a 15-point composite sample collected from 2 to 10 feet above grade and 2 to 8 inches below the surface of the import pile. This result along with the results for the previously analyzed grab sample are considered adequate to meet the sampling frequency.

b) Bank backfill - approximately 1,500 cubic yards of 1.5 inch minus material is required for creating the bed between the geotextile material and the 3 feet of rip rap that will be placed on the bank. The initial copper result (98.2 mg/kg) exceeded the fill criteria but was below EPA PRGs for sediment. Three additional 5-point composite samples were analyzed for copper and the draft results are 100, 115 and 90.4 mg/kg (laboratory report is attached). These results are consistent with the grab sample result, and the material is considered acceptable. The other factor considered in accepting the grab sample results for this material is the nature of the source. The source is monolithic basalt from Livingston mountain outside of Vancouver. It is blasted to car-size chunks, reduced to smaller sizes using hydraulic breakers, and then sent through a crusher to achieve the required grain size. This processing thoroughly mixes the material and so the grab sample is essentially a composite sample.

c) Berm backfill - approximately 3,000 cubic yards of material are required for the berm backfill that will be used within soil wraps and subgrade on the reconstructed berm. One foot of topsoil will be placed over this material and it will be planted. If the originally identified berm backfill material is used, a composite sample will be collected of this material and analyzed for all required constituents. The results for the initial grab sample indicated exceedance of import fill criteria for 2 dioxin congeners. The additional analysis of a composite sample will further inform this result; however, I have discussed this detection with DEQ toxicologists and, based on a relatively low TEQ (1.62), they do not expect this to be a risk issue particularly considering that the material will be covered by 1 foot of soil and vegetated. I was informed today that the supplier has identified an alternate potential source for this material. Evraz is planning to collect one five-point composite of this newly identified material and analyze for all constituents (metals, SVOCs/PAHs, PCBs, pesticides and dioxins/furans). Results will be provided to DEQ before a decision is made on whether to use this new material, the originally identified material, or possible the 1.5 inch minus material that is being used for bank backfill.

2. EPA expressed concern with the proposal to use the 1.5 inch minus material in the berm in place of the material specified in the remedial design. Sheet D-85803 from the final design report specifies that berm backfill material reflect the following characteristics:

Sieve size (inches)
% passing

4	99-100
2	70-100
No. 4	50-80
No. 40	30 Max
No. 200	7.0 Max
Sand equivalent	50 Min

Based on these characteristics, the 1.5 inch minus bank backfill material should meet this criteria with the exception of the minimum sand component and is expected to meet stability requirements. As stated above, Evraz has identified a new source of material meeting these specifications and will be collecting one five-point composite of the newly-sourced material for analysis of all constituents. In the event the 1.5 inch minus material is preferred over the new or original berm source material, then Evraz will complete an engineering and landscape evaluation to assess whether the 1.5 inch minus material would meet the stability and vegetation support requirements in the berm. This evaluation would be documented as a basis for any decisions to deviate from the material characteristics prescribed in the remedial design. Evraz will not use the substitute material if it does not meet those requirements.

3. The ND values for dioxin in the summary table prepare by EOS' consultant reflected ND at the EDL as documented in the lab sheets that were also included in the submittal. Future tabulations will clarify this in a footnote. Also, the dioxin TEQs for mammals, fish, and birds will be included in the summary tables for dioxin results.

I believe this addresses the concerns EPA presented in the comments on the import fill evaluation. Please call me if I have missed something or if you have questions or concerns about the proposed approach.

Thanks again for your input.

Jennifer Sutter
Project Manager, DEQ NWR Cleanup and Tanks
700 NE Multnomah St., Suite #600,
Portland, OR 97232.
(503) 229-6148

From: DeMaria, Eva [mailto:DeMaria.Eva@epa.gov]
Sent: Wednesday, July 22, 2015 11:19 AM
To: SUTTER Jennifer
Cc: MCCLINCY Matt; Sheldrake, Sean; Michael Allen (allenmc@cdmsmith.com<mailto:allenmc@cdmsmith.com>)
Subject: RE: Evraz Riverbank Import - Chemical testing results

Jennifer-

I've attached EPA's draft comments on the initial testing of potential import material for the Evraz riverbank restoration project. Please call or email if you have questions. Thanks.

Eva

Eva DeMaria
Office of Environmental Cleanup
U.S. EPA Region 10 | 1200 Sixth Avenue, Ste. 900, ECL-122 | Seattle, WA 98101
P: 206-553-1970 | demaria.eva@epa.gov<mailto:demaria.eva@epa.gov>

From: Linda Baker [mailto:lbaker@integral-corp.com]
Sent: Monday, July 20, 2015 4:47 PM
To: SUTTER Jennifer
Cc: DeMaria, Eva; Sheldrake, Sean; Drew Gilpin (Drew.Gilpin@evrazna.com<mailto:Drew.Gilpin@evrazna.com>); Debbie Deetz Silva (Debbie.Deetz.Silva@evrazna.com<mailto:Debbie.Deetz.Silva@evrazna.com>); Mike Byers (mike.byers@creteconsulting.com<mailto:mike.byers@creteconsulting.com>); Craig Heimbucher; Jane Sund
Subject: Evraz Riverbank Import - Chemical testing results

Jennifer - below and attached is the information on import material testing to date. I have copied Eva DeMaria and Sean Sheldrake for EPA source control, since EPA asked to see the import data in their comments on the design.

Import material testing is in process for the EVRAZ riverbank source control measure. The supplier (J L Storedahl & Sons) has provided data for three potential import materials as follows:

1. 1.5" minus crushed rock that is to be placed between the geofabric and the rock armor (LIVINGSTON G-121 ODOT 1½')

2. Beach backfill that is to be used as backfill in beach removals (DAYBREAK G-109 BEACH BACK; also BB-S Comp, BB-C Comp, BB-N Comp and BB-Total Comp)

3. Berm backfill that is to be used subgrade in berm removal areas, within soil wraps and located below 1-foot of topsoil (LIVINGSTON G-121 BERM BAC)

The attached files include a summary table of analytical results (excel file), and the analytical reports. The initial samples were grab samples. The beach backfill is from a gravel pit and the sample was from a pile that was excavated from the gravel pit and stockpiled. The excavating and moving around provides some degree of compositing and the arsenic results (with the exception of the anomalous result that could be a laboratory error) support the uniform nature of the material. The 1.5-inch minus is crushed rock from a basalt quarry and is expected to be uniform in concentration (quarry in one type of rock

without significant variability in the rock type). While the original samples were not composites, they are considered representative as the original product is a uniform, mixed material.

Here is a summary of the results and current status:

1. 1.5" minus crushed rock (to be placed between geofabric and rock armor):

a. Meets design import criteria except copper and, pending confirmation sampling, DEQ has indicated the copper concentrations is acceptable. The copper concentration was 98.2 mg/kg; the import criteria is the DEQ background value for the Portland Basin, 34 mg/kg.

b. The 1.5" minus will be considered acceptable pending additional copper testing confirming the initial result (or showing lower concentrations). The supplier is retesting 3 composite samples for copper. We have discussed the 98.2 mg/kg copper result with DEQ and they have indicated that if the98.2 mg/kg result is confirmed by the subsequent testing they will consider the material acceptable. This concentration is:

i. Below risk-based criteria being considered for Portland Harbor (JSCS= 149 mg/kg, EPA Draft PRG (June 2015): RAO 5- Direct contact ingestion=149 mg/kg; RAO9 Riverbank Soil and Sediment= 149 mg/kg)

ii. Below DEQ HH RBC Residential 3,100 mg/kg; and below most DEQ terrestrial Ecological Criteria. It exceeds the DEQ Level II Eco risk screening value for invertebrates (Oak Ridge number for earthworms) of 50 mg/kg by a factor of 2. Because of this material's lack of organics, limited placement between the geofabric and the rock armor, where volumes are limited and the exposure potential for earthworms is unlikely (3 feet below final grade except for the limited area under the dock where it will be 1.5 feet below grade).

2. Beach backfill (to backfill in beach removal areas)

a. Meets design import criteria

b. As indicated on the attached table, the original arsenic concentration was reported by the laboratory to be 59 mg/kg and has not been confirmed by additional testing. The import criteria for arsenic is the DEQ background for the Portland Basin, 8.8 mg/kg. The 59 mg/kg arsenic result was considered anomalous as this is native, unimpacted material and the laboratory was asked to run an additional aliquot from the same sample. The second aliquot result was 4.45 mg/kg. Based on this result, the supplier collect three 5-point composites to get a better handle on the arsenic concentrations (and they also analyzed a composite sample of the composites). The arsenic concentrations in the composite samples were 4.29, 4.43 and 4.46 mg/kg and the arsenic concentration in the composite of composites was 3.91 mg/kg. After discussions with DEQ and based on these results, arsenic concentrations meet the background-based criteria and the import material is considered acceptable.

3. Berm backfill (to be used subgrade in berm removal areas, within soil wraps and located below 1-foot of topsoil)

a. Meets design import criteria except low level dioxins and furans (D/F) concentrations (2,3,7,8-Tetra CDD at 0.726 pg/g; 2,3,7,8-Tetra CDF at 6.81/7.2 pg/g).

b. We are considering two options for the berm backfill as follows:

i. Use of the Berm Backfill material as is, with an additional composite sample to confirm D/F concentrations. Per discussions with DEQ, the supplier may choose to run a 5-point composite for D/F. Should the results confirm these concentrations (or be lower than these concentrations), then this material will be considered acceptable for the berm backfill.

ii. Using the 1.5"minus material in the berm in lieu of the original specified material provided the landscape designer finds it acceptable and copper concentrations are confirmed.

1. Riverbank designers have determined that it is suitable from a geotechnical perspective: The original material specified for the berm backfill was a well-graded 4 inch minus aggregate. In general, the originally specified berm backfill and the 1.5" minus are both mixtures of sand and gravel. The berm backfill specification allows for a higher percentage of sand and it allows larger gravel when compared to the crushed rock. To dig into the details, the berm backfill specification has a relatively even distribution of gravel and sand size particles (it allows more sand than gravel) and allows up to 7% of silt size particles. The 1.5" minus crushed rock is gravel and sand size aggregate with more gravel than sand. The allowable maximum gravel size in the 1.5-inch minus is smaller than the berm backfill specification allows. The crushed rock specification requires between 25 and 40 percent sand with the rest being gravel smaller than 1.5 inches. Both materials will work from a strength perspective for embankment stability.

2. It meets import criteria except copper which is undergoing additional testing and will likely be considered acceptable as it meets likely risk-based values for copper being considered for Portland Harbor and will be located beneath 1 foot of topsoil and within soil wraps and will comprise only a portion of the overall berm..

3. We are verifying with the landscape designers to make sure that the crushed rock is compatible with the landscaping requirements for the berm.

We will keep you posted on:

. The results of additional copper testing of the 1.5" minus rock

. The input of the landscape designer with regard to suitability of the 1.5" minus rock for berm backfill

. The decision whether to test a composite sample of the berm backfill or use the 1.5" minus rock for the berm backfill.

Please let us know if you have any questions. Thanks

Linda Baker | Principal Hydrogeologist
Integral Consulting Inc. | www.integral-corp.com<http://www.integral-corp.com/>
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Tel: 206-230-9600, ext. 314 | Direct: 206.957.0314 | Cell: 206.719.3421 | Fax: 206.230.9601

HEALTH ENVIRONMENT TECHNOLOGY SUSTAINABILITY

Craig Heimbucher

From: SUTTER Jennifer <SUTTER.Jennifer@deq.state.or.us>
Sent: Monday, August 10, 2015 9:30 AM
To: Drew Gilpin (Drew.Gilpin@evrazna.com); Linda Baker; Craig Heimbucher
Cc: Jane Sund; Jamie Stevens (jamie.stevens@creteconsulting.com)
Subject: FW: EVRAZ riverbank import material analytical data table

-----Original Message-----
From: DeMaria, Eva [mailto:DeMaria.Eva@epa.gov]
Sent: Monday, August 10, 2015 9:28 AM
To: SUTTER Jennifer
Cc: Sheldrake, Sean
Subject: RE: EVRAZ riverbank import material analytical data table

Jennifer-

Sorry for our delayed review, but we agree that the material passes. Thanks.

Eva

-----Original Message-----
From: SUTTER Jennifer [mailto:SUTTER.Jennifer@deq.state.or.us]
Sent: Sunday, August 09, 2015 1:26 PM
To: Craig Heimbucher
Cc: Drew Gilpin (Drew.Gilpin@evrazna.com); Debbie Deetz Silva (Debbie.Deetz.Silva@evrazna.com); SUTTER Jennifer (jennifer.sutter@state.or.us); Linda Baker; Mike Byers (mike.byers@creteconsulting.com); Jane Sund; DeMaria, Eva; Sheldrake, Sean; PETERSON Jenn L; poulsen.mike@deq.state.or.us; Jamie Stevens (jamie.stevens@creteconsulting.com)
Subject: RE: EVRAZ riverbank import material analytical data table

Thanks Craig
DEQ approves the use of the Daybreak beach backfill material and the Owl Creek Berm Backfill material for Evraz Oregon Steel Shoreline stabilization.

Jennifer Sutter, Project Manager
Oregon DEQ Cleanup

_____
From: Craig Heimbucher [cheimbucher@integral-corp.com]
Sent: Friday, August 07, 2015 12:10 PM
To: SUTTER Jennifer
Cc: Drew Gilpin (Drew.Gilpin@evrazna.com); Debbie Deetz Silva (Debbie.Deetz.Silva@evrazna.com); SUTTER Jennifer (jennifer.sutter@state.or.us); Linda Baker; Mike Byers (mike.byers@creteconsulting.com); Jane Sund; DeMaria.Eva@epa.gov; sheldrake.sean@epa.gov; PETERSON Jenn L; POULSEN Mike; Jamie Stevens (jamie.stevens@creteconsulting.com)
Subject: RE: EVRAZ riverbank import material analytical data table

Jennifer,

We have received the dioxin/furan (D/F) data for the Owl Creek berm backfill and the Daybreak beach backfill. The Daybreak beach backfill meets all of the import criteria. We plan to continue with import of the Daybreak beach fill material next week.

The Owl Creek berm backfill sample met all the import criteria except for Octa-chlorinated dioxin, which slightly exceeded import criteria. The sample result is 5.3 pg/g, while the import criteria is 5.0 pg/g. Octa CDD is the least toxic congener (i.e., least TCDD-like), with a 2005 mammalian toxicity equivalency factor of 0.0003.

The updated table is attached, along with the lab reports.

I have also addressed your questions below, with the exception of the source information on the Owl Creek berm material. I'll get that information to you as soon as we get it from the supplier.

1. Laboratory sheets with QA documentation for results that have not already been provided are attached. These include results from the Owl Creek berm backfill and the Daybreak beach backfill composite samples. For the draft lab reports, I'll provide you the final when I receive them. Please let me know if you are missing anything else.
2. Description of fill sources.

a. Beach backfill -

Sample IDs: Daybreak G-109 Beach Backfill; BB-S Comp; BB-C Comp; BB-N Comp; BB-Total Comp

Intended use: backfill in beach removals

Source: excavated from a gravel pit (the daybreak pit) in the east fork of the Lewis River valley. The pit location is about 1,000 to 2,000 ft from the river.

b. Bank backfill (1-1/2 inch minus crushed) -

Sample IDs: LivingstonG-121 ODOT 11/2"; Livingston G-121 ODOT 1 1/2"E Comp; Livingston G-121 ODOT 1 1/2"E Comp; Livingston G-121 ODOT 1 1/2"E Comp

Intended use: to be placed between the geofabric and the rock armor

Source: starts out as monolithic basalt on Livingston mountain outside of Vancouver. It is blasted to car-size chunks, reduced to smaller sizes using hydraulic breakers and then sent through a crusher to result in the required grain size. Again, material is currently in a stockpile.

c. Preferred Berm backfill (Owl Creek)-

Sample ID: OWL CREEK BF

Intended use: subgrade in berm removal areas, within soil wraps and located below 1-foot of topsoil

Source: to be provided

1. Summary of sample collection procedures:

Owl Creek Berm Backfill - See Attachment A

Composite beach backfill and bank backfill samples were collected by Mr. Terry Rice of Columbia West Engineering. The following is a description of composite sample collection procedures provided by Mr. Rice for the 1-1/2" minus crushed rock bank backfill. Mr. Rice confirmed that the same procedures were followed for the beach backfill composite samples:

Samples were collected with the following basic method. There was approximately 2,500 cy of subject material at the Livingston Pit. The storage pile was divided into three sections (with sample name extensions: EComp = East composite, CComp = Center composite, and WComp = West composite). The loader operator cut into the piles at several locations at approximately 3' above ground surface, backed out and dumped the load. Samples were taken from the pile into the "cut in" location or were collected from 6" to 12" inches below surface with a shovel and hand spade. Each section composite sample contained a discrete sample from 5 different locations for a 5 point composite. Samples from each of the five locations were mixed and rock exceeding approximately 0.75" was discarded. The composite sample was placed in sample jar container, labeled, stored in a cooler, and a chain of Custody was completed and samples were delivered to Apex Laboratories in Tigard, Oregon for analysis. Apex delivered samples to Maxxam Analytics International in Ontario, Canada for analysis of dioxins/furans.

1. D/F results are included in the data summary table. The mammalian dioxin TEQ value is included in the All Data sheet for all samples analyzed for D/F. In addition, bird and fish TEQ values are included in the table for the Owl Creek berm backfill sample that slightly exceeded import criteria for Octa CDD.
As stated above, we plan to import the Daybreak beach backfill next week. The Owl Creek berm backfill is the second of two sources tested, and we believe this is the preferred material based on the analytical results. We would like to move forward with import of the Owl Creek berm backfill next week if possible, but will need your approval. Please provide us with feedback on the Owl Creek berm backfill results at your earliest convenience.
Let me know if you have any additional questions.
Thanks,
Craig Heimbucher
Direct: 503.943.3629 | Cell: 503.419.7949

From: SUTTER Jennifer [mailto:SUTTER.Jennifer@deq.state.or.us]
Sent: Thursday, August 06, 2015 3:46 PM
To: Craig Heimbucher
Cc: Drew Gilpin (Drew.Gilpin@evrazna.com); Debbie Deetz Silva (Debbie.Deetz.Silva@evrazna.com); SUTTER Jennifer (jennifer.sutter@state.or.us); Linda Baker; Mike Byers (mike.byers@creteconsulting.com); Jane Sund; DeMaria.Eva@epa.gov; sheldrake.sean@epa.gov; PETERSON Jenn L; POULSEN Mike
Subject: RE: EVRAZ riverbank import material analytical data table

Thanks Craig
The summary data look good.
Please provide the following:

1. Laboratory sheets with QA documentation for results for which this has not already been provided.

2. Description of fill sources.

3. Summary of sample collection procedures.

4. For dioxin results, include dioxin TEQ values (fish, bird, mammal) in the data summary, at a minimum for any samples where congeners were detected above the import criteria.

I will be out of the office tomorrow and won't be able to check my email until late in the day. I will take a look at whatever is sent over the weekend, however. It is possible that Mike Poulsen and Jennifer Peterson will be able to look at the dioxin data tomorrow (they are in a meeting all day however) so please send the data to them as well.

Feel free to call if you have any questions.

Jennifer Sutter
Project Manager, DEQ NWR Cleanup and Tanks
700 NE Multnomah St., Suite #600,
Portland, OR 97232.
(503) 229-6148

From: Craig Heimbucher [mailto:cheimbucher@integral-corp.com]
Sent: Thursday, August 06, 2015 2:33 PM
To: SUTTER Jennifer (jennifer.sutter@state.or.us<mailto:jennifer.sutter@state.or.us>); DeMaria.Eva@epa.gov<mailto:DeMaria.Eva@epa.gov>; sheldrake.sean@epa.gov<mailto:sheldrake.sean@epa.gov>
Cc: Drew Gilpin (Drew.Gilpin@evrazna.com<mailto:Drew.Gilpin@evrazna.com>); Debbie Deetz Silva (Debbie.Deetz.Silva@evrazna.com<mailto:Debbie.Deetz.Silva@evrazna.com>); Linda Baker; Mike Byers (mike.byers@creteconsulting.com<mailto:mike.byers@creteconsulting.com>); Jane Sund
Subject: EVRAZ riverbank import material analytical data table

Jennifer, Eva, Sean,

Attached is a spreadsheet summarizing the EVRAZ riverbank import material chemistry data we have collected to date for beach, berm and bank import material. We are still waiting on dioxin/furan results for the Owl Creek berm fill and the BB-Total beach backfill composite samples. We expect results today or tomorrow and will send you the results as soon as we receive them.

All recent analytical for the beach backfill (BB-Total Comp) and berm backfill (Owl Creek BF) are below the import criteria. In order to keep the project moving forward, we would greatly appreciate your feedback within a few hours of receiving the dioxin/furan data. Ideally we'd like to let the contractor know if they can begin importing berm and beach material by Monday.

Let me know if you have any questions or comments on the attached tables.

Thanks,

Craig Heimbucher, P.E. | Senior Engineer Integral Consulting Inc. | www.integral-corp.com<http://www.integral-corp.com/>
319 SW Washington St. Suite 1150 | Portland, OR 97204
Tel: 503.284.5545 ext 629 | Direct: 503.943.3629 | Cell: 503.419.7949 | Fax: 503.284.5755

HEALTH ENVIRONMENT TECHNOLOGY SUSTAINABILITY

Craig Heimbucher

From: SUTTER Jennifer <SUTTER.Jennifer@deq.state.or.us>
Sent: Tuesday, October 13, 2015 4:33 PM
To: Craig Heimbucher
Cc: Drew Gilpin (Drew.Gilpin@evrazna.com); Debbie Deetz Silva (Debbie.Deetz.Silva@evrazna.com); Mike Byers (mike.byers@creteconsulting.com); Linda Baker; Jamie Stevens (jamie.stevens@creteconsulting.com); Jane Sund; SUTTER Jennifer
Subject: RE: Topsoil import material data

Thanks Craig
DEQ approves the use of the topsoil mix described below as import fill for the top/front of the berm.
Note that the summary of TEQ results in the email switched the results for ND = RL and ND = 1/2RL. Also, benz(a)anthracene is a carcinogen; and chrysene, also a carcinogen, was also detected but below screening criteria.
I forwarded the results to Eva DeMaria, EPA, and she indicated they would provide feedback by 5 pm today. I will forward their response when I receive it.
Feel free to call if you have any questions.

Jennifer Sutter
Project Manager, DEQ NWR Cleanup and Tanks
700 NE Multnomah St., Suite #600,
Portland, OR 97232.
(503) 229-6148

From: Craig Heimbucher [mailto:cheimbucher@integral-corp.com]
Sent: Tuesday, October 13, 2015 10:00 AM
To: SUTTER Jennifer
Cc: Drew Gilpin (Drew.Gilpin@evrazna.com); Debbie Deetz Silva (Debbie.Deetz.Silva@evrazna.com); Mike Byers (mike.byers@creteconsulting.com); Linda Baker; Jamie Stevens (jamie.stevens@creteconsulting.com); Jane Sund
Subject: Topsoil import material data

Jennifer,

We are requesting DEQ concurrence on the use of topsoil mix consisting of compost from S & H Landscape Supply (part of BES stormwater mix previously tested and approved) and sandy loam from the Molalla River (referred to as Topsoil #2). The mix ratio is 1 part compost to 4 parts sandy loam and the textural analysis of the Topsoil #2 meets the physical requirements of the planting design.

A pre-mixed topsoil sample, collected as a 5-point composite, was analyzed for chemical criteria. All chemical criteria met the goals identified in the design report except selected dioxin/furan (D/F). The detected concentrations are relatively low as discussed below (all data is attached). Five noncarcinogenic PAHs (butyl benzyl phthalate, benz(a)anthracene, fluoranthene, phenanthrene and pyrene) were detected at concentrations below the design report goals and below applicable JSCS and EPA draft PRGs. In addition, one SVOC was not detected but had a detection limit slightly above the goal identified in the design report (benzoic acid: import goal was 2000 ug/kg and reporting limit was 2090 ug/kg).

Please review the attached summary tables and information below on dioxin/furan, and let us know if you concur that the Topsoil #2 is acceptable for use as the planting substrate on the riverbank berm. The topsoil will be used on the top/front of the berm and will be 2 foot thick for a total volume of up to 2,000-4,000 cy. The soil on the newly constructed berm will be covered by an erosion control blanket (coconut fiber jute mat) and planted.

In order to prevent a delay in construction, we would appreciate a response on Topsoil #2 today. We are currently analyzing a third topsoil source (Topsoil #3) and expect results next week. We will be using Topsoil #2 pending results of Topsoil #3. If Topsoil #3 is considered acceptable, we plan to switch to from using Topsoil #2 to Topsoil #3.

Dioxin/Furan

The Topsoil #2 D/F results that exceed import goals in the design report are all slightly less than the D/F results of the BES stormwater mix that was approved for use by DEQ.

Four D/F congeners exceeded their import goal (based on the reporting limit) as follows:

	SH-Composite (9/14/15) (pg/g; ng/kg)	**Import Criteria (pg/g; ng/kg)**	**mammalian TEF (unitless)**
	RESULT		
1,2,3,4,6,7,8-Hepta CDD	**76.3**	2.5	0.01
1,2,3,4,6,7,8-Hepta CDF	**6.77**	2.5	0.01
Octa CDD	**857**	5	0.0003
Octa CDF	**24.2**	5	0.0003

TEQs calculated with 3 treatments of NDs and 3 TEFs.

1.7	0.7	0.5	2.3	1.4	1.9	2.0	1.1	1.2	ng TEQ/kg dw dw
ND=0			ND=1/2RL			ND=RL			
mammalian 2005	fish	bird	mammalian 2005	fish	bird	mammalian 2005	fish	bird	

As the table shows, these concentrations/TEQs are below:

1. JSCS toxicity SLV for 2,3,7,8 TCDD = 9 ng/kg dw.
2. EPA draft FS RAO 1 PRG for human direct contact = 10 ng TEQ/kg dw.
3. Puget Sound DMMP open water disposal for non-dispersive sites = 4 ng TEQ/kg dw.
4. ODEQ Ecological toxicity SLVs and RBCs.

Some concentrations/TEQ exceed bioaccumulative-based screening level values and draft PRGs. However, this material will be above the 100-year flood plain (not in the water) and as noted above, measures are being taken to prevent erosion.

Please let me know if you have any questions.

Thanks,

Craig Heimbucher, P.E. | Senior Engineer
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HEALTH ENVIRONMENT TECHNOLOGY SUSTAINABILITY

Craig Heimbucher

From: SUTTER Jennifer <SUTTER.Jennifer@deq.state.or.us>
Sent: Tuesday, October 13, 2015 6:34 PM
To: Craig Heimbucher
Cc: Drew Gilpin (Drew.Gilpin@evrazna.com); Linda Baker
Subject: FW: Topsoil import material data
Attachments: ~WRD000.jpg; EPA comments - EVRAZ import soil as berm backfill 151013.docx

Craig
FYI - EPA's response. This does not change DEQ's approval.
Please forward as appropriate. I don't have all my contacts at home.
Thanks!
Jennifer

_____
From: DeMaria, Eva [DeMaria.Eva@epa.gov]
Sent: Tuesday, October 13, 2015 5:30 PM
To: SUTTER Jennifer
Cc: Michael Allen (allenmc@cdmsmith.com); Sheldrake, Sean
Subject: Re: Topsoil import material data

Hi Jennifer-

I've attached our comments. Please note these were made for fast turnaround so I haven't had the opportunity to fully review. We can discuss tomorrow morning, if necessary. Thanks.

Eva

_____
From: SUTTER Jennifer <SUTTER.Jennifer@deq.state.or.us>
Sent: Tuesday, October 13, 2015 3:52 PM
To: DeMaria, Eva
Subject: RE: Topsoil import material data

Thanks Eva

FYI I'm attaching the input I received from one of our toxicologists.

Jennifer

From: DeMaria, Eva [mailto:DeMaria.Eva@epa.gov]
Sent: Tuesday, October 13, 2015 3:48 PM
To: SUTTER Jennifer

Subject: Fw: Topsoil import material data

Hi Jennifer-

We won't be able to provide our comments until 4:30 earliest, hopefully 5 latest.

Eva

_____

From: DeMaria, Eva
Sent: Tuesday, October 13, 2015 2:19 PM
To: SUTTER Jennifer
Subject: Re: Topsoil import material data

Hi Jennifer-

We'll try to get you feedback by that time too. Thanks.

Eva

_____

From: SUTTER Jennifer <SUTTER.Jennifer@deq.state.or.us>
Sent: Tuesday, October 13, 2015 10:11 AM
To: DeMaria, Eva
Subject: FW: Topsoil import material data

Hi Eva

Let me know if you have any concerns with using this material as berm backfill at Evraz Oregon Steel. I'm looking at it now and wanted to get this to you right away since work will stop today if they can't use this material. I plan to give them my feedback by 4 pm this afternoon.

Thanks!

Jennifer Sutter

Project Manager, DEQ NWR Cleanup and Tanks

700 NE Multnomah St., Suite #600,

Portland, OR 97232.

(503) 229-6148[Image removed by sender.]

From: Craig Heimbucher [mailto:cheimbucher@integral-corp.com]
Sent: Tuesday, October 13, 2015 10:00 AM
To: SUTTER Jennifer
Cc: Drew Gilpin (Drew.Gilpin@evrazna.com); Debbie Deetz Silva (Debbie.Deetz.Silva@evrazna.com); Mike Byers (mike.byers@creteconsulting.com); Linda Baker; Jamie Stevens (jamie.stevens@creteconsulting.com); Jane Sund
Subject: Topsoil import material data

Jennifer,

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SH-Composite (9/14/15) (pg/g; ng/kg)

Import Criteria (pg/g; ng/kg)

mammalian TEF (unitless)

RESULT

1,2,3,4,6,7,8-Hepta CDD

76.3

2.5

0.01

1,2,3,4,6,7,8-Hepta CDF

6.77

2.5

0.01

Octa CDD

857

5

0.0003

Octa CDF

24.2

5

0.0003

TEQs calculated with 3 treatments of NDs and 3 TEFs.

1.7

0.7

0.5

2.3

1.4

1.9

2.0

1.1

1.2

ng TEQ/kg dw; pg TEQ/g dw

ND=0

ND=1/2RL

ND=RL

mammalian 2005

fish

bird

mammalian 2005

fish

bird

mammalian 2005

fish

bird

As the table shows, these concentrations/TEQs are below:

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Please let me know if you have any questions.

Thanks,

Craig Heimbucher, P.E. | Senior Engineer

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